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LIST OF PENDING CLAIMS

The following are the claims presented for examination with this Response being submitted January 11, 2007:

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Claim 1 (original): A coiled carbon nanotube having a non-hexagonal/hexagonal carbon ring ratio in the range of 0.1:1 to 1:1.

Claim 2 (original): The coiled carbon nanotube of claim 1 wherein the non-hexagonal/hexagonal carbon ring ratio is 0.1:1.

Claim 3 (original): The coiled carbon nanotube of claim 1 wherein the non-hexagonal/hexagonal carbon ring ratio is 1:1.

Claim 4 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a substantially uniform distance between coils throughout its length.

Claim 5 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a substantially uniform diameter throughout its length.

Claim 6 (currently amended): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a substantially uniform distance between coils and diameter throughout its length.

Claim 7 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a diameter of less than 1000 nm.

Claim 8 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a diameter of less than 100 nm.

Claim 9 (original): The coilcd carbon nanotube of claim 1 wherein the nanotube comprises a distance between coils of less than 1000 nm.

Claim 10 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a distance between coils of less than 200 nm.

Claim 11 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a diameter of less than 1000 nm and a distance between coils of less than 1000 nm.

Claim 12 (original): The coiled carbon nanotube of claim 1 wherein the nanotube comprises a diameter of less than 100 nm and a distance between coils of less than 200 nm.

Claims 13 -20 (canceled)

Claim 21 (withdrawn): A method of manufacturing coiled carbon nanotubes, comprising:

placing a supported metal catalyst inside of a reaction chamber;

creating a microwave field inside said reaction chamber;

introducing a hydrocarbon source gas into said reaction chamber; and

reacting for a time and at a temperature sufficient to form said coiled carbon nanotubes.

Claim 22 (withdrawn): The method of claim 21, wherein an inert gas is introduced into said reaction chamber.

Claim 23 (withdrawn): The method of claim 21, wherein said source gas is acetylene.

Claim 24 (withdrawn): The method of claim 21, wherein said metal catalyst comprises a metal selected from the group consisting of iron, nickel, cobalt, and vanadium.

Claim 25 (withdrawn): The method of claim 21, wherein said catalyst support is selected from the group consisting of silica, zeolite, and magnesium carbonate.

Claim 26 (withdrawn): The method of claim 21, wherein said metal catalyst is iron and said catalyst support is magnesium carbonate.

Claim 27 (withdrawn): The method of claim 21, wherein said metal catalyst is iron and said catalyst support is silica.

Claim 28 (withdrawn): The method of claim 21, wherein said metal catalyst is nickel and said catalyst support is zeolite.

Claim 29(withdrawn): The method of claim 21, further comprising the use of a stirrer to make said microwave field uniform.

Claim 30 (withdrawn): The method of claim 21, further comprising a stub tuner.

Claim 31 (withdrawn): The method of claim 30, further comprising a port circulator for controlling said stub tuner.

Claim 32 (withdrawn): The method of claim 21, further comprising a circulating chiller.

Claim 33 (withdrawn): A method for manufacturing coiled carbon nanotubes, comprising:

placing a supported metal catalyst inside of a reaction chamber;
creating a microwave field inside said reaction chamber;
introducing a hydrocarbon source gas into said reaction chamber;
using a feedback system to control the temperature inside said reaction chamber and the flow rate of said hydrocarbon source gas; and

reacting for a time and at a temperature sufficient to form said coiled carbon nanotubes.

Claim 34 (withdrawn): The method of claim 33, wherein an inert gas is introduced into said reaction chamber.

Claim 35 (withdrawn): The method of claim 33, wherein said source gas is acetylene.

Claim 36 (withdrawn): The method of claim 33, wherein said metal catalyst comprises a metal selected from the group consisting of iron, nickel, cobalt, and vanadium.

Claim 37 (withdrawn): The method of claim 33, wherein said catalyst support is selected from the group consisting of silica, zeolite, and magnesium carbonate.

Claim 38 (withdrawn): The method of claim 33, wherein said metal catalyst is iron and said catalyst support is magnesium carbonate.

Claim 39 (withdrawn): The method of claim 33, wherein said metal catalyst is iron and said catalyst support is silica.

Claim 40 (withdrawn): The method of claim 33, wherein said metal catalyst is nickel and said catalyst support is zeolite.

Claim 41 (withdrawn): The method of claim 33, further comprising the use of a stirrer to make said microwave field uniform.

Claim 42 (withdrawn): The method of claim 33, further comprising a stub tuner.

Claim 43 (withdrawn): The method of claim 42, further comprising a port circulator for controlling said stub tuner.

Claim 44 (withdrawn): The method of claim 33, further comprising a circulating chiller.

Claim 45 (withdrawn): The method of claim 33, wherein said feedback system comprises:

a pyrometer;

a switching power supply;

a computer;

a master flow controller; and

a mass flow controller.

Claim 46 (currently amended): A coiled carbon nanotube having a non-hexagonal /hexagonal carbon ring ratio in the range of 0.1:1 to 1:1 produced by the process of:

placing a supported metal catalyst inside of a reaction chamber;

creating a microwave field inside said reaction chamber;

introducing a hydrocarbon source gas into said reaction chamber; and

reacting for a time and at a temperature sufficient to form said coiled carbon nanotubes.

Claim 47 (original): The coiled carbon nanotube of claim 46, wherein argon is introduced into said reaction chamber.

Claim 48 (original): The coiled carbon nanotube of claim 46, wherein said source gas is acetylene.

Claim 49 (original): The coiled carbon nanotube of claim 46, wherein said metal catalyst comprises a metal selected from the group consisting of iron, nickel, cobalt, and vanadium.

Claim 50 (original): The coiled carbon nanotube of claim 46, wherein said catalyst support is selected from the group consisting of silica, zeolite, and magnesium carbonate.

Claim 51 (original): The coiled carbon nanotube of claim 46, wherein said metal catalyst is iron and said catalyst support magnesium carbonate.

Claim 52 (original): The coiled carbon nanotube of claim 46, wherein said metal catalyst is iron and said catalyst support is silica.

Claim 53 (original): The coiled carbon nanotube of claim 46, wherein said metal catalyst is nickel and said catalyst support is zeolite.

Claim 54 (original): The coiled carbon nanotube of claim 46, further comprising the use of a stirrer to make said microwave field uniform.

Claim 55 (original): The coiled carbon nanotube of claim 46, further comprising a stub tuner.

Claim 56 (currently amended): The coiled carbon nanotube of claim 55, further comprising a port circulator for ~~controling~~ controlling said stub tuner.

Claim 57 (original): The coiled carbon nanotube of claim 46, further comprising a circulating chiller.

Claim 58 (original): The coiled carbon nanotube of claim 46, further comprising the use of a feedback system to control the temperature inside said reaction chamber and the flow rate of said hydrocarbon source gas.

Claim 59 (original): A coiled carbon nanotube produced by the process of claim 58, wherein said feedback system comprises:

a pyrometer;

a switching power supply;

a computer;

a master flow controller; and

a mass flow controller.

Claim 60 (currently amended): An article of manufacture having a non-hexagonal /hexagonal carbon ring ratio in the range of 0.1:1 to 1:1 produced by the process of:

placing a supported metal catalyst inside of a reaction chamber;

creating a microwave field inside said reaction chamber;

introducing a hydrocarbon source gas into said reaction chamber; and

reacting for a time and at a temperature sufficient to form said coiled carbon nanotubes.

Claim 61 (original): The article of manufacture of claim 60, wherein argon is introduced into said reaction chamber.

Claim 62 (original): The article of manufacture of claim 60, wherein said source gas is acetylene.

Claim 63 (original): The article of manufacture of claim 60, wherein said metal catalyst comprises a metal selected from the group consisting of iron, nickel, cobalt, and vanadium.

Claim 64 (original): The article of manufacture of claim 60, wherein said catalyst support is selected from the group consisting of silica, zeolite, and magnesium carbonate.

Claim 65 (original): The article of manufacture of claim 60, wherein said metal catalyst is iron and said catalyst support is magnesium carbonate.

Claim 66 (original): The article of manufacture of claim 60, wherein said metal catalyst is iron and said catalyst support is silica.

Claim 67 (original): The article of manufacture of claim 60, wherein said metal catalyst is nickel and said catalyst support is zeolite.

Claim 68 (original): The article of manufacture of claim 60, further comprising the use of a stirrer to make said microwave field uniform.

Claim 69 (original): The article of manufacture of claim 60, further comprising a stub tuner.

Claim 70 (original): The article of manufacture of claim 69, further comprising a port circulator for controlling said stub tuner.

Claim 71 (original): The article of manufacture of claim 60, further comprising a circulating chiller.

Claim 72 (currently amended): The article of manufacture of claim 60, further comprising the use of a feedback system for ~~controling~~ controlling the temperature inside said reaction chamber and the flow rate of said hydrocarbon source gas.

Claim 73 (original): The article of manufacture of claim 72, wherein said feedback system comprises:

a pyrometer;

a switching power supply;

a computer;

a master flow controller; and

a mass flow controller.

Respectfully submitted,

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